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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/674,620	11/03/2000	Hidekuni Moriya	Q60962	1567
7590	11/19/2003		EXAMINER	ROSARIO-VASQUEZ, DENNIS
Sughrue Mion Zinn Macpeak & Seas 2100 Pennsylvania Avenue NW Washington, DC 20037-3202			ART UNIT	PAPER NUMBER 2621
DATE MAILED: 11/19/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/674,620	MORIYA ET AL.	
	Examiner	Art Unit	
	Dennis Rosario-Vasquez	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

Preliminary Amendment filed Mar. 20, 2001

- 1) Responsive to communication(s) filed on 11/3/2000 and 3/27/01: Preliminary Amendment filed Mar. 28, 2001
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-14 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-14 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 03 November 2000 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) The translation of the foreign language provisional application has been received.
 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The abstract of the disclosure is objected to because the abstract has two paragraphs only one paragraph can be used in an abstract. Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities:

Note that any claims changed or canceled will require a modification to the specification.

The brief description of the drawings does not make reference to figures:

12a-12c

14a-14b

15a-15b

16a-16c

17a-17c

18a-18c

There should be a reference to each view depicted in the drawings in accordance with 37 CFR 1.79. Referring to an entire group of sub-figures, such as "figures 12a-12c depict..." would be acceptable.

Page 32, line 17 has a label referring to figure 1 as "A4" which should be

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changed to "AL1" for a proper correspondence with figure 1.

Page 32, line 9 has the word "sharpening" which should be changed to "smoothing".

Page 22, line 14 has the abbreviation "RGT" which should be changed to "RGB".

Page 39, line 4 has the abbreviation "RGG" which should be changed to "RGB".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujita et al. (U.S. Patent 5,659,402).

With regard to claims 1,13, and 14 Fujita et al. discloses a computer (Fig. 3 and col. 12, lines 30-48) method of a system wherein an image data retouching apparatus for determining the characteristic of each picture element in image data which express images in a dot matrix form in multiple tones and retouching each picture element in a way appropriate to its characteristic (Fujita states, "When the constituent pixels of an image are successively processed as an object pixel, it is first judged which image area of a character image area and gray-scale image area each object pixel belongs to, and then a proper image processing of the respective image areas can be realized by

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performing a processing operation for the object pixel in accordance with the judgment result"(col. 1, lines 33-39).), said apparatus comprising:

an image data acquisition unit (Fig. 1, num. 2) for acquiring said image data;
a picture element characteristic determining unit (fig. 1, num. 5) for figuring out
the distribution of differences of tone levels between object picture elements (Using
figure 2, Fujita states," When each of the pixels is processed as an object pixel X, the
density data (multivalued density data after the shading correction) of pixels
A, B, C and D at the four corners of a 3X3 pixel matrix having the object pixel X in
the center thereof are used. Provided that characters A, B, C and D also denote the
respective density data of the pixels A, B, C and D, a quadratic differential value S(X)
and the square SS(X) of the quadratic differential value S(X) are calculated... (col. 6,
lines 12-21).", which are the picture elements of the image data acquired by said image
data acquisition unit, and neighboring picture elements (fig. 2, boxes labeled A, B, C, D)
in a prescribed range (The range is the 3X3 pixel matrix as described above) around the
object picture elements (The object picture element is "X" as described above), and
determining the characteristic of each object picture element by comparing the
distribution so figured out with a prescribed model distribution (Fujita et al. states," In
this embodiment, the judgment is made on which image area among the character
image area, gray-scale image area and dotted image area the object pixel X belongs to,
by employing the aforesaid square value SS(X) and the square sum SIGMA.SS(X) as
principal determination values (col. 6, lines 35-39)[Using figure 3 as the prescribed
model distribution, the results of SS(X) and SIGMA.SS(X) are used in a threshold

process to classify each characteristic of an image (col. 6, lines 49-51)]" ; and

an image data retouching unit (fig. 1, num. 6 and 7) for executing prescribed image processing according to the characteristic of picture elements determined (Using figure 1, Fujita et al. states," The differential filter 6 performs a processing operation suitable for the character image data, and serves to emphasize the profile of the character image by making the boundary between black pixels and white pixels distinct. The integrating filter 7 performs a processing operation suitable for the dotted image data, and serves to smooth the dotted image data (col. 5, lines 25-31).") by said picture element characteristic determining unit.

With regard to claim 2, Fujita et al. discloses an image data retouching apparatus, as claimed in claim 1, wherein said picture element characteristic determining unit utilizes for determination the distribution in a range of smaller differences and the distribution in a range of greater differences (Fujita et al. states, "That is, the absolute value of the quadratic differential value S is large in the character [or edge] image area, while the absolute value is small in the gray-scale image area. Therefore, the discrimination between the character image area and gray-scale image area can be achieved by judging on the magnitude of the quadratic differential value S (col. 1, lines 63-67 and col. 2, lines 1,2) .")

With regard to claim 3, Fujita et al. discloses a method of a system wherein an image data retouching apparatus, as claimed in Claim 1, wherein said picture element characteristic determining unit utilizes for determination the positive or negative polarization of said distribution (Fujita states," The density variation value may

be either a positive or negative value because it is calculated based on density differences between the object pixel and the respective peripheral pixels around the object pixel (col. 2, lines 61-64).")

With regard to claim 4, Fujita discloses a method of a system wherein an image data retouching apparatus, as claimed in Claim 1, wherein said picture element characteristic determining unit determines picture elements to be edge picture elements if the distribution in said range of greater differences is dominant (Equations 2, 3 (not labeled in the reference) and 4 use a sum of differences that are judged to be a character image area by using equations 2, 3 and 4 in the inequality step labeled in figure 3 as "n4" wherein "c is a predetermined threshold value for the judgment of character image area(col. 7, lines 57,58) (col. 6, lines 36-39)) and if said distribution is polarized positively or negatively.

With regard to claim 5, Fujita discloses a method of a system wherein an image data retouching apparatus, as claimed in Claim 1, wherein said image data retouching unit executes sharpening of images if said object picture elements are determined to be edge picture elements (Using figure 1, Fujita et al. states, " The differential filter 6 performs a processing operation suitable for the character image data, and serves to emphasize the profile of the character image by making the boundary between black pixels and white pixels distinct... These data [above mentioned "character image data"] are then sent to a selector circuit 9. A selection signal is input to the selector circuit 9 from the area separating circuit 5. In response to the selection signal, the selector circuit 9 selectively outputs data from the differential filter 6 (col. 5,

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lines 25-28 and 34-38)."

With regard to claim 6, Fujita et al. discloses a method of a system wherein an image data retouching apparatus, as claimed in Claim 5, wherein said sharpening forms a matrix having a prescribed number of picture elements centering on an object picture element and is executed by a sharpening filter wherein a prescribed coefficient to emphasize the object picture element is set in each picture element position in the matrix (Fujita et al. states, " When it is judged which image area of the character image area and gray-scale image area the object pixel X belongs to, reference is made to the density values of four pixels A, B, C and D which are located at the four corners of a 3X3 pixel matrix having the object pixel X in the center thereof (col. 1, lines 45-49)."

With regard to claim 7, Fujita et al. discloses a method of a system wherein an image data retouching apparatus, as claimed in 1, wherein said picture element characteristic determining unit determines picture elements to be moire picture elements (Fujita et al. states, " In accordance with this embodiment, however, since the dotted image data sent to the error diffusion circuit 11 is preliminarily smoothed by the integrating filter 7, the moire is not generated. That is, by processing the dotted image data in the integrating filter 7, the dotted image data can be processed in the same manner as the gray-scale image data (col. 5, lines 57-63) [Using figure 1, the area separating circuit 5 indirectly determines whether a moiré is present by determining whether a dotted image data is present; as a result, all dotted image data are susceptible to moiré which are smoothed by the integrating filter 7].") if the distribution in said range of smaller differences is dominant and if said distribution is polarized

positively or negatively.

With regard to claim 8, Fujita et al. discloses a method of a system wherein an image data retouching apparatus, as claimed in Claim 1, wherein said image data retouching unit executes smoothing of images (Fujita et al. states, "The integrating filter 7 performs a processing operation suitable for the dotted image data, and serves to smooth the dotted image data (col. 5, lines 29-31).") if said object picture elements are determined to be moire picture elements.

With regard to claim 9, Fujita et al. discloses a method of a system wherein an image data retouching apparatus, as claimed in Claim 8, wherein said smoothing forms a matrix having a prescribed number of picture elements centering on an object picture element and is executed by a smoothing filter wherein prescribed coefficients are set to roughly average (Using equation (15) at column 10, line 65 an average ($F_{OUT}(X)$) is determined) said object picture elements in different picture element positions (Fig. 2, the labeled boxes at "X", "X+1", "H", and "D") in the matrix (Fig. 2).

With regard to claim 10, Fujita et al. discloses a method of a system wherein an image data retouching apparatus, as claimed in claim 1, wherein said image data retouching unit obtains a retouching value for the luminance value of said image data, and adds the retouching value to the tone values of element colors to retouch the image data (Fujita et al. states, "The sum $\text{.SIGMA.SS}(X)$ of the square values of the quadratic differential values [gradient or tone values] obtained for five pixels X-2, X-1, X, X+1 and X+2 with the object pixel X being centered ...is calculated...(col. 6, lines 26-30).").

With regard to claim 11, Fujita et al. discloses a method of a system wherein

an image data retouching apparatus, as claimed in claim 1, wherein:

in retouching the image data of the picture elements, an image data attribute specifying unit for acquiring specification of the attribute of image data to be handled is caused to execute the function thereof, and

said image data retouching unit is caused to execute the function thereof on the basis of the image data having the attribute acquired by said image data attribute specifying unit (claim 11 was addressed in claim 1 at "When the constituent pixels of an image...")

With regard to claim 12, Fujita et al. discloses a method of a system wherein an image data retouching apparatus, as claimed in claim 11, wherein said image data attribute specifying unit specifies luminance signals as the attribute when high-speed image data retouching is desired (Fujita et al. states, "Therefore, the object pixel can be properly processed at a high speed in accordance with the type of image area to which the object pixel belongs (col. 3, lines 29-31).") and specifies element color signals constituting an image as the attribute (This element was addressed in claim 1 at "multivalued density data") when high-quality image data retouching is desired (Fujita et al. states, "The present invention relates to image processing methods and image processing apparatuses for properly processing a character image, gray-scale image and dotted image for high-quality image reproduction... (col. 1, lines 5-9)")

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Namizuka et al. is pertinent as teaching a method of a "smoothing operation by using filters having flat characteristics in the weak and strong tone areas...(col. 10, lines 28,29)"

Lepore et al. is pertinent as teaching a method of determining a median adjacent pixel difference, which are then sorted in a histogram according to intensity for the median calculation (col. 4, lines 7-9).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Rosario-Vasquez whose telephone number is 703-305-5431. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau can be reached on 703-305-4706. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

DPV
Dennis Rosario-Vasquez
Patent Examiner
Unit 2621



BRIAN WERNER
PRIMARY EXAMINER